

Problem#1:

Magnitude and direction of a vector: The velocity of a car is given by

$$\mathbf{v} = (30 \hat{i} + 40 \hat{j}) \text{ mph.}$$

- Find the speed (magnitude of \mathbf{v}) of the car.
- Find a unit vector in the direction of \mathbf{v} .
- Write the velocity vector as a product of its magnitude and the unit vector.

Problem#2:

Finding a unit vector : A string is pulled with a force $F = 100 \text{ N}$ as shown in the Figure , Write \mathbf{F} as a vector.

